

We claim:

1. An unpasteurized xanthan composition from a cell which over-expresses *gumB* and *gumC*, wherein said composition has an intrinsic viscosity which is at least 20 % greater than xanthan from a corresponding strain which does not over-express *gumB* and *gumC*.
2. The unpasteurized xanthan composition of claim 1 which has an intrinsic viscosity which is at least 25 % greater than xanthan from the corresponding strain.
3. The unpasteurized xanthan composition of claim 1 which has an intrinsic viscosity which is at least 30 % greater than xanthan from the corresponding strain.
4. A xanthan composition comprising a population of xanthan molecules having a range of molecular lengths, wherein at least 1 % of the population has a length of at least 3 μm as measured by atomic force microscopy.
5. The method of claim 4 wherein at least 5 % of the population has a length of at least 3 μm as measured by atomic force microscopy.
6. A xanthan composition comprising a population of xanthan molecules having a range of molecular lengths, wherein at least 1 % of the population has a length of at least 4 μm as measured by atomic force microscopy.
7. The xanthan composition of claim 6 wherein at least 1 % of the population has a length of at least 5 μm .
8. The xanthan composition of claim 6 wherein at least 1 % of the population has a length of at least 7 μm .
9. A xanthan composition comprising a population of xanthan molecules having a range of molecular lengths, wherein at least 5 % of the total mass of the xanthan molecules in the composition is due to xanthan molecules having a molecular length greater than 3 μm as measured by atomic force microscopy.
10. The xanthan composition of claim 9 wherein at least 10 % of the total mass of the xanthan molecules in the composition is due to xanthan molecules having a molecular length greater than 3 μm as measured by atomic force microscopy.
11. The xanthan composition of claim 9 wherein at least 15 % of the total mass of the xanthan molecules in the composition is due to xanthan molecules having a molecular length greater than 3 μm as measured by atomic force microscopy.

12. The xanthan composition of claim 9 wherein at least 20 % of the total mass of the xanthan molecules in the composition is due to xanthan molecules having a molecular length greater than 3 μm as measured by atomic force microscopy.
13. A food product comprising a xanthan composition according to claim 1.
14. A food product comprising a xanthan composition according to claim 4.
15. A food product comprising a xanthan composition according to claim 6.
16. A food product comprising a xanthan composition according to claim 9.
17. The food product of claim 1, claim 4, claim 6, or claim 9 wherein the food is selected from the group consisting of a salad dressing, a syrup, a juice drink, and a frozen dessert.
18. A printing dye comprising a xanthan composition according to claim 1.
19. A printing dye comprising a xanthan composition according to claim 4.
20. A printing dye comprising a xanthan composition according to claim 6.
21. A printing dye comprising a xanthan composition according to claim 9.
22. An oil drilling fluid comprising a xanthan composition according to claim 1.
23. An oil drilling fluid comprising a xanthan composition according to claim 4.
24. An oil drilling fluid comprising a xanthan composition according to claim 6.
25. An oil drilling fluid comprising a xanthan composition according to claim 9.
26. A ceramic glaze comprising a xanthan composition according to claim 1.
27. A ceramic glaze comprising a xanthan composition according to claim 4.
28. A ceramic glaze comprising a xanthan composition according to claim 6.
29. A ceramic glaze comprising a xanthan composition according to claim 9.
30. A pharmaceutical composition comprising a xanthan composition according to claim 1.
31. A pharmaceutical composition comprising a xanthan composition according to claim 4.
32. A pharmaceutical composition comprising a xanthan composition according to claim 6.
33. A pharmaceutical composition comprising a xanthan composition according to claim 9.
34. The pharmaceutical composition according to claim 30 which is a controlled-release formulation.
35. The pharmaceutical composition according to claim 31 which is a controlled-release formulation.

36. The pharmaceutical composition according to claim 32 which is a controlled-release formulation.
37. The pharmaceutical composition according to claim 33 which is a controlled-release formulation.
38. The pharmaceutical composition according to claim 34 which is a controlled-release formulation.
39. A method of producing a xanthan polymer preparation having increased viscosity relative to that produced by a wild-type strain, comprising:
- selectively increasing the amount of gene product of *gumB* and *gumC* but not of *orfX* and not of a gene selected from the group consisting of *gumD-gumG* in a *Xanthomonas campestris* culture, whereby a higher viscosity xanthan polymer preparation is produced by the culture.
40. The method of claim 39 wherein the step of selectively increasing is performed by introducing into the *Xanthomonas campestris* one or more additional copies of *gumB* and *gumC*.
41. The method of claim 39 wherein the step of selectively increasing is performed by introducing into the *Xanthomonas campestris* one or more additional copies of *gumB* and *gumC* but not *gumD-gumG*.
42. The method of claim 39 wherein the step of selectively increasing is performed by introducing to the *Xanthomonas campestris* one or more additional copies of *gumB* and *gumC* but not *orfX* and not *gumD-gumG*.
43. The method of claim 40 wherein the additional copies are on an extrachromosomal genetic element.
44. The method of claim 43 wherein the extrachromosomal genetic element is a plasmid.
45. The method of claim 44 wherein the plasmid is a broad host range plasmid.
46. The method of claim 39 wherein the additional copies are integrated in the genome of the *Xanthomonas campestris*.
47. The method of claim 39 wherein the step of selectively increasing is performed by inducing *gumB* and *gumC* expression using an inducible promoter and an inducing agent which increases expression from the inducible promoter.
48. The method of claim 39 further comprising the step of recovering the higher viscosity xanthan polymer from the preparation.

49. The method of claim 39 further comprising the step of precipitating xanthan polymer from the higher viscosity xanthan polymer preparation.
50. A method of producing a xanthan polymer preparation having increased viscosity relative to that produced by a wild-type strain, comprising:
- culturing a *Xanthomonas campestris* strain in a culture medium under conditions in which it produces a xanthan polymer, wherein the strain selectively produces more gene product of *gumB* and *gumC* but not of *orfX* and not of a gene selected from the group consisting of *gumD-gumG* relative to a wild-type strain.
51. The method of claim 50 wherein the strain has more than one copy of *gumB* and *gumC* per copy of *gumD*.
52. The method of claim 50 wherein the strain has more than one copy of *gumB* and *gumC* per copy of *gumD-gumG*.
53. The method of claim 50 wherein the strain has more than one copy of *gumB* and *gumC* per copy of a gene selected from the group consisting of *gumD-gumG*.
54. The method of claim 50 wherein the strain has more than one copy of *gumB* and *gumC* per copy of *orfX*.
55. The method of claim 50 wherein the strain has more than one copy of *gumB* and *gumC* per copy of *orfX* and of *gumD-gumG*.
56. The method of claim 50 wherein the strain carries one or more plasmids which in aggregate carry at least one copy of *gumB* and *gumC*.
57. The method of claim 50 further comprising the step of recovering a higher viscosity xanthan polymer from the culture medium.
58. The method of claim 50 further comprising the step of precipitating xanthan polymer from the culture medium.
59. An unpasteurized xanthan composition from a cell which over-expresses *gumB* and *gumC*, wherein said composition has a seawater viscosity which is at least 10 % greater than xanthan from a corresponding strain which does not over-express *gumB* and *gumC*.
60. The xanthan composition of claim 59 which has a seawater viscosity of DR > 25 when the seawater viscosity is measured in a solution of 41.95 g of sea salt per 1 liter deionized water and at a concentration of 0.86 g xanthan per liter.

61. The xanthan composition of claim 59 which has a seawater viscosity which is at least 15% greater than xanthan from a corresponding strain which does not overexpress *gumB* and *gumC*.
62. An oil drilling fluid comprising a xanthan composition according to claim 59.
63. An oil drilling fluid comprising a xanthan composition according to claim 61.